Summary of Classroom Space Needs

There was agreement among survey respondents for several basic, traditional, classroom needs including whiteboards or blackboards and an adequate supply of markers or chalk, an instructor workstation capable of playing DVDs, and a projector and projection screen. Some respondents also expressed the need for reliable wireless internet access, and there was a broad preference expressed for tables over traditional desks in classrooms. Lastly, there was broad agreement on the need for classrooms to have adequate temperature and ventilation controls.

Given that many programs are teaching their courses to both in-person and remote learners, respondents also expressed a need for strong telepresence / videoconferencing technology to be built into some existing traditional classrooms. Even for classes that do not need to be simulcast to multiple locations, there was interest expressed in easy-to-use recording technology to capture classroom activities so that they could be watched at a later time.

Deficiencies in Classrooms

Respondents were broadly satisfied with the existing setup of classrooms, however there were some areas for improvement needed.

Many respondents indicated that the number of blackboards in classrooms should be reduced in favor of whiteboards and that some blackboards no longer work well. There were also concerns that projectors display their image in a location that takes up a significant amount of whiteboard or blackboard space. Some rooms, such as Red School House 200, were identified as being too large and the Williston campus was identified as having a lack of space that leads to problems with noise in neighboring rooms.

There were also several issues identified with existing telepresence systems. Projecting slide decks from one location to another was identified as a challenge, as was the lack of microphones at various remote sites, issues with getting those microphones to function correctly, and difficulties with getting two-way communication with remote students. These issues were described as necessary fixes by some and optional improvements by others. Other instructors who teach remotely highlighted the need for better tools to ensure academic honesty during examinations.

Lastly, the climate control of some rooms was noted as a deficiency, with some rooms described as being airless or excessively warm. Again, some felt these were mandatory fixes while others thought of them as optional improvements.

Areas for Improvement in Classrooms

Some respondents felt that new classroom configurations with small groups of desks would enhance classroom learning. Also, reconfiguring lighting so that light levels could be turned down at the front of the room only for the projectors was indicated as a useful change. Other suggestions: a coffee machine, improved soundproofing, more color on classroom walls, allowing faculty to keep visual aids up in classrooms, exchanging printers for multifunction printer-copier-scanner units for buildings on the

Randolph Center campus that are far from Green, and an unmounted equine skeleton that would enhance student understanding of equine anatomy.

Summary of Laboratory Needs

As is to be expected, many responses to these questions were program specific. Many programs requested computer lab spaces with projectors. Specific needs included:

- Paramedicine: multiple rooms with break out stations to preserve the element of surprise when students cycle through activities in groups. Because this program works with simulated blood products, sinks, counters, and disposal areas as well as a non-carpeted classroom floor is necessary. Additional simulation space replicating the environment in an ambulance, bathroom, alleyway, etc. Is necessary. Similar concerns were expressed by the Nursing program.

- Engineering: More storage space, instrument space in chemistry lab for civil engineering, more CAD computer labs

- Construction Management: A plan room with computers so students could complete group projects. (Competitor schools all have these).
- Ag: Farm lab space with multiple animal species

- Aviation: physics lab room, also used for meteorology, and the Burlington Airport

- Architectural Engineering: physical lab space for fluids, thermodynamics, and construction materials testing. Drafting spaces, though those are decreasing in importance. Space for a Tinius-Olson Universal Testing Machine.

- Civil Engineering: Existing CET lab space and instrument space in chemical lab

- Equine Studies: Sufficiently sized indoor and outdoor riding arena and stable area, with space for teaching uninterrupted by other activities.

- Vet Tech: Upgrade radiology equipment.

- CIS: The existing CIS lab spaces serve our needs well – we have servers that are capable of virtualization, routers and switches to teach networking and separate dedicated lab spaces to store them in.

Deficiencies in Laboratory Spaces

Multiple programs indicated the need for updating computer systems (Construction, Civil, Architectural Engineering), as well as general lab equipment upgrades (Construction and Civil). Chairs in computer labs were highlighted as an item in disrepair. Specific requests included:

- Dental Hygiene: Labs at distance sites are not available except during lab sessions or when an instructor can be available

- Nursing: More IV pumps needed statewide

- Equine: Need more spaces with access to an outlet for teaching without interruptions

Areas for Improvement in Labs

General suggestions were to make sure lab spaces have similar projection and whiteboard capabilities as classrooms. Program-specific suggestions were:

- Aviation: Wind tunnel for aerodynamics class, space for a weather station (that program already has) installed in a permanent location

- Nursing: Lyndon skills lab needs a complete makeover. New hospital beds statewide.

- Civil Engineering: Computer and projector on each side of the CET Lab. Removal of old piping that is no longer used. Access to the chemical instrumentation formerly in storage room of Chemistry Lab 123 and space for experimentation.

- Electrical and Computer Engineering: System to allow instructor to demonstrate hardware and project to the whole class.

- Construction management: Dual monitors in computer rooms.

- Equine: Younger, healthy horses capable of carrying riders of varying sizes.

- CIS: Equipment is satisfactory for now but will need to be upgraded on a rotating basis. There is also the need for a better room in which to store our cybersecurity simulator.

Game Changers

Technology that allows students to simulate real-life situations led the list of game changing ideas for classroom technology. Flight simulators for the Pilot program; increased simulation opportunities for Nursing and Allied Health; holographic projection capability, a full environmental systems experimental room and large-scale structural testing systems for Architectural Engineering; Electrical Engineering simulators; and Business simulation software were all mentioned. In addition, there was significant support for technology that provides a common experience for students. These included a plan room with large monitors capable of displaying an entire drawing (Construction Management), software such as a school license for Near Pod which allows formative assessment in telepresence teaching, Educasting, (Nursing) and some support to have students enter with a specific sort of laptop that would already have the software needed for their major installed and easily updated.

Not technology necessarily but certainly a game changer would be a reliable, transparent and predictable system for ensuring that technology could be kept up-to-date. Some ideas included repeating a survey similar to this periodically, providing regular faculty development relative to instructional innovations in their field, and in innovations in teaching in general, (perhaps utilizing resources/people that we already have on campus) and increased support for facilities personnel, who, at the end of the day are responsible for maintaining the classrooms. Funding was a huge concern.